UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,415	03/15/2001	Cameron Hay	1418-25	3492

7590 03/16/2005

NIXON & VANDERHYE P.C.
8th Floor
1100 North Glebe Road
Arlington, VA 22201

EXAMINER	
LAYE, JADE O	

ART UNIT	PAPER NUMBER
2614	

DATE MAILED: 03/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/808,415	HAY, CAMERON	
	Examiner	Art Unit	
	Jade O. Laye	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 March 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 March 2001* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because Figures 2-4 appear too dark to accurately comprehend applicant's full disclosure. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

   a. Items #8 and #10 are both referred to as "processor," but drawings make a distinction.

   b. Item #12 is referred to using different names in specification and drawing Fig. 1.

c. Item #6 is referred to in specification as "storage disk," but drawings refer to it as mass storage.

d. Item #14 is not described within specification.

Appropriate correction is required.

e. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
(e) BACKGROUND OF THE INVENTION.
(1) Field of the Invention.
(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(f) BRIEF SUMMARY OF THE INVENTION.
(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(h) DETAILED DESCRIPTION OF THE INVENTION.
(i) CLAIM OR CLAIMS (commencing on a separate sheet).
(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Regarding claims 19 and 35, the phrase "such as" renders the claims indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bang et al (US Pat. No. 5,715,325) in view of Neff et al (US Pat. No. 5,809,171), and further in view of Cannon. (US Pat. No. 6,286,005).

Claim 1 recites a method of measuring brand exposure in a video stream, comprising the steps of:

a. providing a reference mask representing a trade mark;

b. capturing frames from the video stream;

c. searching each captured frame using the reference mask to determine a respective correlation value indicative of the likelihood of the presence of the trade mark of the mask in that captured frame in dependence upon correlation between the mask and part of that captured frame; and

d. calculating a brand exposure value for the video stream in dependence upon the determined correlation values.

As to sub-elements "b" and "c", Bang discloses an image detection system which captures a video image and determines the identity of the face within the captured frame. This is achieved through a comparison of the face with various templates (i.e., reference mask) stored on the system. The template which scores the strongest correlation (i.e., correlation value) to the face is determined to be the match. (Col. 1, Ln. 15-22 & Col. 2, Ln. 10-46). But, Bang fails to disclose the limitations contained in sub-elements "a" and "d." However, these limitations are contained in the references discussed below.

As to sub-element "a", Neff discloses a similar system in which various "images" can be identified via the use of an image processing method and apparatus. This is achieved by comparing the test image with an image template stored on the system. (Abstract & Col. 1, Ln. 12-17). The Examiner broadly interprets "image" to encompass any image, symbol, etc. stored as a template, including trade marks.

As to sub-element "d," Cannon discloses a method of analyzing advertising data, which allows an advertiser to evaluate, create, *rank*, and *score* advertising campaigns based upon ad exposure (i.e., calculate an exposure value). (Col. 3, Ln. 31-67 ; Col. 29, Ln. 35-67 thru Col. 30, Ln. 1-19). (Essentially, this is the function of the applicant's invention--to provide advertisement related statistics via the analysis of ad exposure). As disclosed by Cannon, various methods of ad evaluation via ad exposure are well-known in the art. Applicant is only claiming an alternative method of ascertaining ad exposure achieved through image recognition, which is also well known in the art. (as evidenced by Bang).

Accordingly, it would have been obvious to one of ordinary skill in this art at the time of applicant's invention to combine the systems of Bang, Neff, and Cannon in order to provide a system capable of determining the advertising exposure/value of advertising campaigns via the calculation of trade mark exposure, thereby providing business entities with an alternative method of evaluating advertisement expenditures (Cannon, col. 3 ln. 60-67.)

Claims 18, 19, and 36 correspond to the method claim 1. Thus, each is analyzed and rejected as previously discussed.

Claim 2 recites the method of claim 1, wherein the determined correlation value for each frame has either of only two possible values. As discussed above, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 1, and Bang further teaches the system can calculate multiple numbers of possible correlation values. (Col. 7, Ln. 4-39). In view of this disclosure, the limitation of claim 2 is an obvious variant. In other words, a system, which calculates only two possible values, is an obvious variant of one that calculates two or more possible values. Accordingly, the combined systems of Bang, Neff, and Cannon contain the limitations of claim 2.

Claim 20 corresponds to the method claim 2. Therefore, it is analyzed and rejected as previously discussed.

Claim 3 recites the method of claim 1, wherein the determined correlation value for each frame has one of a multiplicity of possible values. As discussed above, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 1, and Bang further teaches the system can calculate multiple numbers of possible correlation values. (Col. 7, Ln. 4-39). Accordingly, the combined systems of Bang, Neff, and Cannon contain the limitations of claim 3.

Claim 21 corresponds to the method claim 3. Therefore, it is analyzed and rejected as previously discussed.

Claim 4 recites the method of claim 3, wherein, in the calculating step, such a determined correlation value is taken into account only if that determined correlation value lies within a particular range of the values. As discussed above, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 3, and Bang further teaches that only templates that exceed predetermined scores are further analyzed. (Col. 7, Ln. 4-39). Accordingly, the combined systems of Bang, Neff, and Cannon contain the limitations of claim 4.

Claim 22 corresponds to the method claim 4. Therefore, it is analyzed and rejected as previously discussed.

Claim 5 recites the method of claim 4, wherein, in the calculating step, the magnitude of such a determined correlation value within said range is taken into account. As discussed above, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 4, and Bang further teaches that only templates (within the specified range), with the highest correlation value are selected (i.e., taken into account their magnitudes). (Col. 7, Ln. 4-39). Accordingly, the combined systems of Bang, Neff, and Cannon contain the limitations of claim 5.

Claim 23 corresponds to the method claim 5. Therefore, it is analyzed and rejected as previously discussed.

Claim 6 recites the method of claim 1, wherein each searching step includes the step of determining a respective scale value in dependence upon the scale of said part of the captured frame relative to the mask; and in the calculating step, the brand exposure value is calculated in dependence upon both the determined correlation values and the respective scale values. As discussed above, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 1, and Neff further teaches that the scale (i.e., size) of the captured image is taken into account when determining the overall correlation value. (Col. 14, Ln. 8-44). Accordingly, the combined systems of Bang, Neff, and Cannon contain the limitations of claim 6.

Claim 24 corresponds to method claim 6. Thus, it is analyzed and rejected as previously discussed.

Claim 7 recites the method of claim 1, wherein: each searching step includes the step of determining a respective position value in dependence upon the position of said part of the captured frame relative to the complete frame; and in the calculating step, the brand exposure value is calculated in dependence upon both the determined correlation values and the respective determined position values. As discussed above, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 1, and Neff further teaches the position of the test image is also taken into account when determining the overall correlation value. (Col. 14, Ln. 31-44). Accordingly, the combined systems of Bang, Neff, and Cannon contain the limitations of claim 7.

Claim 25 corresponds to the method claim 7. Therefore, it is analyzed and rejected as previously discussed.

Claim 8 recites the method of claim 1, wherein the method further includes the step of providing an audience rating value; and in the calculating step, the brand exposure value is calculated in dependence upon both the determined correlation values and the audience rating value. As discussed above, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 1, and Cannon further teaches it is well-known in this art to use consumer viewing statistics (i.e., audience rating values) to assist in the evaluation of advertising campaigns. (Col. 1, Ln. 64-67 thru Col. 2, Ln. 1-16). Accordingly, it would have been obvious to one of ordinary skill in this art at the time of applicant's invention to further modify the combined systems of Bang, Neff, and Cannon to allow the system to also consider audience ratings in order to provide a more effective method of evaluating advertisement decisions.

Claim 26 corresponds to the method claim 8. Therefore, it is analyzed and rejected as previously discussed.

Claim 9 recites the method of claim 8, wherein the provided audience rating value varies for different frames; and in the calculating step, the brand exposure value is calculated in dependence upon both the determined correlation values and the respective audience rating values. As discussed above, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 8, and Bang further teaches his system (and any other image recognition apparatus) is capable of capturing framed images in a video stream. (Col. 1, Ln. 15-22 & Col. 2, Ln. 10-46). Cannon further teaches that viewer statistics can be collected on a minute-by-minute basis, since of course, viewer preferences can change over time. (Col. 6, Ln. 15-21). During these minute-by-minute intervals, frames are being transmitted. Therefore, it logically follows that certain frames will have higher viewer preferences than others. Thus, the combined teachings of Bang and Cannon would suggest a system capable of analyzing viewer preferences

based upon captured frames (since audience rating value varies for different frames). Accordingly, it would have been obvious to one of ordinary skill in this art at the time of applicant's invention to further modify the combined teaching of Cannon and Bang in order to provide a system capable of analyzing captured frames in order to ascertain audience rating values, thereby providing a real-time calculation of advertisement effectiveness.

Claim 27 corresponds the method claim 9. Therefore, it is analyzed and rejected as previously discussed.

Claim 10 recites the method of claim 1, wherein, in each searching step, in the case of a plurality of presences of the trade mark of the mask in the frame, the method is capable of determining a plurality of correlation values for that frame. This claim is an obvious variant of claim 1. Under the rejection of claim 1, the combined references teach the system is capable of detecting whatever target images are present in the frame. This teaching is interpreted to encompass one or various images in the viewing space; therefore, the system is capable of calculating correlation values for a plurality of images. Accordingly, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 10.

Claim 28 corresponds to the method claim 10. Therefore, it is analyzed and rejected as previously discussed.

Claim 11 recites the method of claim 1 wherein the reference mask is one of a plurality of different such reference masks representing the same trade mark; and such searching steps are performed for each of the reference masks. As discussed above, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 1, and Neff further teaches the templates can be warped or textured (i.e., plurality of reference masks representing the same trade mark) in order to compensate for differences between the test image and the template. Here, the templates are

divided and each is compared. (Col. 6, Ln. 4-28). Accordingly, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 11.

Claim 29 corresponds to the method claim 11. Thus, it is analyzed and rejected as previously discussed.

Claim 12 recites the method of claim 11, wherein a respective mask weighting value is provided for each reference mask; and in the calculating step, the brand exposure value is calculated in dependence upon both the determined correlation values and the respective mask weighting values. In applicant's specification, the respective mask weighting value can determined as a proportion of size, definition, or contrast of the image. (Spec. Pg. 4, Ln. 22-27). As discussed above, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 11, and Neff further teaches that size is used as a factor in determining the correlation value. (Col. 14, Ln. 31-44). Accordingly, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 12.

Claim 30 corresponds to the method claim 12. Thus, it is analyzed and rejected as previously discussed.

Claim 13 recites the method of claim 1, wherein the reference mask is one of a plurality of different such reference masks representing different trade marks; such searching steps are performed for each of the reference masks; and in the calculating step, a plurality of brand exposure values are calculated for the different trade marks. As discussed above, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 1, and Bang further teaches the system is capable of storing multiple templates, which represent different faces (i.e., objects). (Col. 3, Ln. 10-29). In light of this disclosure, it is inherent the system be capable of calculating different exposure values for the different templates which possible correspond to various test

images located in the frame. Accordingly, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 13.

Claim 31 corresponds to the method claim 13. Therefore, it is analyzed and rejected as previously discussed.

Claim 14 recites the identical limitations of claim 12, except it depends from claim 13, not claim 11. However, the same analysis and rejection used under claim 12 is applicable here. Accordingly, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 14.

Claim 32 corresponds to the method claim 14. Thus, it is analyzed and rejected as previously discussed.

Claim 15 recites the method of claim 1, further comprising the step of storing each of the frame which contributes to the brand exposure values; and storing the respective value(s) determined from that frame. As discussed above, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 1, and Neff further teaches the correlation values are stored on the system. (Col. 15, Ln. 59-67). Also as discussed above, storing frames is inherent in light of the disclosure of the combined references. In order to analyzed the captured images, the system must be capable of storing those images. Accordingly, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 15.

Claim 33 corresponds to the method claim 15. Therefore, it is analyzed and rejected as previously discussed.

Claim 16 recites the method of claim 1, wherein the calculating step comprises summing the correlation values or a function of each correlation value. As discussed above, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 1, and Neff further teaches

the system is capable of summing correlation values. (Col. 18, Ln. 20-39). Accordingly, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 16.

Claim 34 corresponds to the method claim 16. Therefore, it is analyzed and rejected as previously discussed.

Claim 17 recites limitations to numerous to detail herein. All but one limitation in claim 17 is encompassed within claim 1, and therefore, claim 17 is analyzed and rejected as previously discussed therein. The additional limitation in Claim 17 recites "searching each captured frame image to identify if...the mask is above a predetermined threshold." Bang teaches the use of thresholds in determining a facial match. (Abstract). Accordingly, the combined systems of Bang, Neff, and Cannon contain all limitations of claim 17.

Claim 35 corresponds to the method claim 17. Therefore, it is analyzed and rejected as previously discussed.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Takemura et al (US Pat. No. 5,239,595) disclose an optical method of recognizing a pattern.

b. Trew et al (US Pat. No. 5,561,718) disclose a system capable of identifying a image in a video stream.

c. Mukohzaka (US Pat. No. 5,878,157) discloses an image identification apparatus.

d. Steffens et al (US Pat. No. 6,301,370) disclose an apparatus capable of face recognition in a video image.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jade O. Laye whose telephone number is (571) 272-7303. The examiner can normally be reached on Mon. 7:30am-4, Tues. 7:30-2, W-Fri. 7:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner's Initial's ____
March 10th, 2005.

NGOC-YEN VU
PRIMARY EXAMINER